

BOOK REVIEWS

ARTHROPOD OVERVIEWS

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Spiders, Webs, Behavior, and Evolution.—William A. Shear (ed.). 1986. Stanford University Press, Stanford, California. 492 pp. 1986. Hardbound: \$55.

Recently, a number of exciting new publications on arachnids have been published. This long-awaited volume is a welcome addition. It is the proceedings of a meeting of the American Arachnological Society at the University of Tennessee in 1981; the contributors were asked to expand the papers.

The book includes 12 chapters written by 15 authors plus a summary chapter and glossary written by the editor. The chapters are listed below.

Web-site selection: are we asking the right questions? Anthony C. Janetos.

Habitat choice and utilisation in web-building spiders. Susan E. Reichert and Rosemary G. Gillespie.

Transmission of vibration in a spider's web. W. Minch Masters, Hubert S. Markl, and Anne J. M. Moffat.

Effects of orb-web geometry on prey interception and retention. William G. Eberhard.

Prey specialisation in the Araneidae. Mark S. Stowe.

Web building and prey capture in the Uloboridae. Yael S. Lubin.

Social spider webs, with special reference to the web of *Mallos gregalis*. William James Tietjen.

Web building and prey capture in communal orb weavers. George W. Uetz.

Web building versatility and the evolution of the Salticidae. Robert R. Jackson.

The role of silk in prey capture by nonaraneomorph spiders. Frederick A. Coyle.

Web removal patterns in orb-weaving spiders. James Edwin Carico.

The monophyletic origin of the orb web. Jonathan Coddington.

The evolution of web-building behavior in spiders: a third generation of hypotheses. William A. Shear.

The wealth of information presented in this volume defies a brief summary. Despite my taxonomic bent I was thoroughly impressed and delighted with most chapters. The book provides a vital coverage of many topics about the construction of webs and unlike some previous treatments deals with many groups, not just the orb-weavers—there are after all a few other spider groups that build webs, orbs and otherwise, even though they are not so elaborate or spectacular. This book marks the birth of the use of behavior as a character in the path to phylogenetic reconstruction. The realisation that behavior is also a character suite that can contribute to unravelling complex phylogenetic knots finally dawns. Although Jonathan Coddington's chapter causes the major upheaval in our concept of an "orb web" (they include also the deinopids), other authors have directed some energy to the integration of taxonomy/phylogeny/evolution and their specialisation of behavior. Robert Jackson takes the cue from *Portia fimbriata*, a bizarre web-building, spider-hunting salticid, and seeks to elaborate a hypothesis for the evolution first of the Salticidae and then

the entire Araneomorphae—"from what tiny seeds the mighty acorn grows." Nevertheless, many avenues remain to be explored. In the words of the editor, "This is a book of questions." Many remain unanswered. I have no doubt that it will stimulate many new and exciting hypotheses for testing.

The highlights for me were Fred Coyle's chapter summarising data on the Mygalomorphae and Mesothelae (Liphistiidae) and presenting his own observations alongside them. Coyle's work, as ever detailed and thorough, is the only such compilation on the much neglected Mygalomorphae. Finally, we see excellent photographs of the diplurid webs that trap a fascinating variety of prey and remain difficult to adequately describe. Equally, Jonathan Coddington's photographs of the diverse webs of the many orb-weaving spider genera provide ample support for his complex and hard argued hypotheses.

Only one thing detracted from the book. The taxonomic glossary provides much appreciated respite from the barrage of names. However, there are numerous errors in it. The Anyphaenidae and Amaurobioidae are listed separately and not crossreferenced. *Cethegus*, an Australian diplurid, steals from the Panamanian *Diplura* the title of being the most aerial of web-building mygalomorphs. The Liphistiidae are deemed to be "not clearly related to the Mygalomorphae or Araneomorphae," the only other spider groups. However, Platnick and Gertsch's (1976) hypothesis about the groups' relationships remains uncontested. I guess others are also present but do not significantly detract from the notion of a glossary or its function.

Overall, I was thoroughly delighted with "Spiders. Webs, Behavior, and Evolution." The style and content lend themselves to reading by all arachnophiles, not just the academics and other professionals. Generally, the editing is very good, the book is a credit to Shear. I unreservedly recommend the volume.—*Robert J. Raven, Queensland Museum, PO Box 300, South Brisbane, 4101, Q. Australia.*

LITERATURE CITED

Platnick, N. I. and W. J. Gertsch. 1976. The suborders of spiders: a cladistic analysis (Arachnida, Araneae). *Amer. Mus. Novitates* 2807:1-15.

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Evolution and Adaptation of Terrestrial Arthropods.—John L. Cloudsley-Thompson. 1988. Springer-Verlag, Berlin, Heidelberg, New York. x + 141 pp. \$33.00 paper.

This slim volume is designed to present "a concise synthesis of certain basic information required for BSc (Hons) and MSc (Entomology) examinations" (author's preface), with a functional emphasis. The nine chapters cover (1) paleontology and phylogeny, (2) implications of life on land, (3) conquest of land by Crustacea, (4) insect phylogeny and origin of flight, (5) evolutionary trends in reproduction, (6) adaptations to extreme environments, (7) dispersal and migration, (8) defensive mechanisms, and (9) success of terrestrial arthropods. These are indeed important areas of functional and evolutionary entomology, ones with recent exciting discoveries